

TranslationClosing Lid

The invention relates to a closing lid made of plastic material especially for tight sealing of an opening in a support plate, especially a motor vehicle body with a covering element and a sealing element.

A closing lid for tight sealing of an opening in a support plate is already known as state of the art (DE 43 27 945 A1). Said closing lid consists of a plastic covering element and a therewith connected sealing element. Two components are provided, i.e. a core component of hard material and a shell component of a softer material, which encloses the core component, which can be cemented together with the support plate, at its outer edges. Such cementation may be cumbersome to perform in certain application fields, so that the object of the present invention consists of developing a closing lid of the initially named kind in such manner so that with simple installation and without outside force via the closing lid there is assurance of a tight seal of the to be sealed opening in a support plate.

Said object is solved according to the invention in that the sealing element consisting of an elastic material is joined via engaging elements with counter-engaging elements of the covering element consisting of a hard component and that the sealing element presents a contact flange and, opposite same, at a distance, at least one elastic sealing lip.

The elastic sealing element is thus installed, in simple fashion, in the covering element consisting of a hard component, whereupon the entire units can be immediately employed for installation in an opening of a covering element, without the need of cementation; the elastic sealing lip, in cooperation with the contact flange, ensures perfect sealing of the support opening.

According to the invention, there also exists the possibility that the engaging elements of the sealing element are designed as cross pieces, which are distributed over the circumference of the

closing lid and are embeddable in openings of the covering element. Alternatively, a construction form is possible in which the engaging elements of the sealing element constitute recesses, which can be locked with projections of the covering element.

A particularly good sealing possibility results from further refinement of the invention in that several sealing lips are successively arranged at the circumference of the sealing element. In such design, the sealing lips can be of equal height and directed towards the contact flange. Alternatively, there exists the possibility that the sealing lips have different heights and are facing away from the contact flange.

In further embodiment of the invention, the covering element is designed as a hollow cylinder equipped with a partitioning wall. Said hollow cylinder can present in a frontal region equipped with counter-engaging element, a flange in which can be embedded the contact flange of the sealing element. In this arrangement, the covering element can be positioned opposite the frontal region, and enclose, at least partially, the sealing element by means of a limitation shoulder, with attention to be paid that the limitation shoulder is lower than the height of the elastic sealing lip.

Also, in further embodiment of the invention, the limitation shoulder can consist of several projections distributed over the circumference of the covering element.

In the following, the invention is described in more detail by means of exemplary embodiments represented in the drawing.

Fig. 1 depicts a center section through a closing lid according to the invention, with the lower region schematically installed in an opening of a support plate;

Fig. 2 depicts another embodiment possibility of the invention following installation in a support plate;

Fig. 3 depicts a perspective view of the closing lid according to Fig. 1.

The closing lid 1 represented in Fig. 1 consists of a covering element 10 and a sealing element 15. The covering element 10 is made of a hard component, whereas the sealing element consists of an elastic plastic material. The sealing element 15 presents engaging elements 20 which are embedded in counter-engaging elements 25 of the covering element. In the present embodiment, the engaging elements 20 of the sealing element 15 are designed as cross-pieces distributed over the circumference of the closing lid, which are embeddable in corresponding counter-openings 25 of the covering element 10.

The covering element is designed as a hollow cylinder equipped with a partitioning wall 40. Said hollow cylinder can have a flange 22 in the frontal region which is fitted with openings distributed over the circumference. On the other side, the hollow cylinder is equipped with at least one limitation shoulder 44, and said limitation shoulder 44 can consist of several projections distributed over the circumference of the covering element 1, according to Fig. 1 and 3.

The sealing element 15 has a contact flange 30 and, opposite same, at a distance, several elastic sealing lips 35. Said elastic sealing lips can have the same height H and be directed towards the contact flange 30.

The flange 22 of the covering element 1 embeds the contact flange 30 of the sealing element 2. The limitation shoulder 44 of the covering element 1 limits the other region of the sealing element 2 and encloses same at least in part. In this arrangement, the height of the limitation shoulder 44 or of the projections is lower than the height H of the elastic sealing lips.

The lower region of Fig. 1 represents the installation of the invention-specific closing lid in an opening 3 of the support plate 2. The support plate 2 presents a circumferential collar, which is directed towards the contact flange 30. Thus, the contact flange 30 of the elastic sealing element 15 limits the support plate 2 or the opening 3, while the first sealing lip 35 places itself on the outer circumference of the opening 3 of the support plate 2 and the second sealing lip is positioned on the upper surface of the support plate 2. Thus, there is assurance of perfect closure of an opening 3 of support plate 2.

In the embodiment according to Fig. 2, the support plate 2 presents a circumferential collar, which is facing away from the contact flange 30 of the sealing element 15. Here, the four successively positioned sealing lips 35 of the sealing element 15 come into play, with the center lips sealing opening 2 of the support plate 3 and the outer sealing lips serving as limitation elements.

The invention guarantees in simple fashion that it is possible, without any gluing procedure, to achieve quickly and effectively a secure closing of an opening 3 in a support plate 2, with said support plate having highly different configurations.